

Remarks

Claims 117-127 are pending. Claims 117-127 stand rejected. A response after final was filed on October 19, 2004. An Advisory Action was mailed on December 23, 2004. The finality of the rejection was maintained in the Advisory Action. A Request for Continued Examination (RCE) is filed herein.

Claim 117 stands rejected under 35 U.S.C. §102(e) over U.S. Patent 6,272,819 (Wendte et al.). Inasmuch as the rejection applies to the claims as amended, Applicants respectfully traverse the rejection.

Claim 117 requires a volume increment accumulation measuring device generating a volume increment accumulation signal substantially related to a forage yield amount.

Wendte does not disclose a volume increment accumulation device. Wendte discloses that, using a sensing assembly (200), "Billets falling down into the external storage device impinge upon deflection plate 202 to exert a *force* on plate 202" (see col. 10, lines 41-43)(emphasis added). Therefore, the sensing assembly (200) of Wendte comprises a force measuring device, *i.e.*, a weight measuring device that measures gravity acting on a mass. Consequently, Wendte is not and cannot measure volume. Volume cannot be measured by a force measuring device, such as a load cell 208 (see col. 11, lines 6-9).

The Office Action asserts that Wendte discloses a volume increment accumulation device because Wendte discusses a "quantity" of sugar cane, and cites col. 11, lines 11-17, in support of this assertion. However, the term quantity is not volume. Wendte does not teach or suggest that this measurement is a measurement of volume.

The Court of Appeals for the Federal Circuit, citing the well-known "all elements" rule, has held that "[a]nticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." Apple Computer, Inc. v. Articulate Systems, Inc., 234 F.3d 14, 57 USPQ2d 1057 (Fed. Cir. 2000). A close scrutiny of Wendte reveals that the term "volume" does not appear anywhere in this prior art reference. As stated above, Wendte is clearly measuring weight/mass.

In the "Response to Arguments" section of the final Office Action, the Office Action asserts that Wendte "explicitly" states a measurement of volume accumulated. The Office Action relies on the statement in Wendte that "The relationship between the quantity of billets and the sensed signal read by circuit 102 can be empirically determined using appropriate curve-fitting algorithms" (see col. 11, lines 14-17). The Office Action attempts to support this argument by stating that "Wendte uses a correlation step of converting a load cell signal into a volume measurement."

This is plainly incorrect. Wendte does not include such a statement. Wendte does not anywhere disclose a volume measurement, or even the word volume. The cited text of Wendte merely describes the processing of the load cell measurement in order to produce a weight output of just the sugar cane. The processing is performed in order to compensate for the weight of the deflection plate 202, wherein the weight of the deflection plate 202 is subtracted from the force measurement signal from the load cell (see col. 11, lines 17-19).

The Advisory Action supplies a dictionary definition that equates volume to mass. While a dictionary is considered to be an authority on word definitions, this equation of volume to mass is contrary to any scientific definition and is clearly a reflection of improper usage of the terms by the general population. Volume is a measure or expression of the amount of space taken up by an object, without regard to the density or mass of that object. Conversely, mass is a measure of the amount of matter in the object, without regard to the density or amount of space taken up by an object. Two objects that share the same volume do not necessarily share the same mass, and vice versa. An illustration of the fallacy of the cited definition would be to state that the mass of a bowling ball is equal to the mass of an equivalent sphere of styrofoam, if volume has the same meaning as mass. Clearly, this is illogical and incorrect.

Independent claim 117 therefore includes features that are neither taught nor suggested by Wendte. Applicants respectfully request that the rejection of claim 117 be removed and the claim be allowed.

Claims 117 and 119 stand rejected under 35 U.S.C § 103(a) over U.S. Patent No. 5,913,901 (Bottinger et al.) in view of U.S. Patent No. 5,480,354 (Sadjadi) in view of U.S. Patent No. 6,525,276 (Vellidus). Applicants respectfully traverse the rejection.

Bottinger discloses a square baler that measures the weight/mass of the received mass (see col. 1, lines 8-10). Bottinger discloses measuring a bale weight/mass in conjunction with a baler position (see col. 1, lines 55-58). The Office Action correctly acknowledges that Bottinger does not disclose a volume increment accumulation measuring device and Bottinger does not disclose a volume increment accumulation signal. The Office Action asserts that the Sadjadi reference provides a yield monitor "which determines yield based on volume measurements."

Sadjadi discloses a grain yield monitor (see col. 1, line 62). Grain yield monitors are known to be incompatible with forage crops for the purpose of yield monitor measurements (see paragraph [0012] of the present application). Therefore, Sadjadi does not teach or suggest a yield monitor for forage crops. Moreover, Sadjadi does not create a volume increment accumulation signal, as Sadjadi measures a distance to a pile of grain on a conveyor belt. In operation, Sadjadi shines a grid of light on the conveyor belt and measures the intensity of reflected light (see col. 3, lines 35-39). The signal produced by Sadjadi therefore comprises an optical image. Sadjadi processes the optical image to generate a series of light intensity signals; whereupon Sadjadi converts the light intensity signals into a series of distances that are used to calculate an instantaneous volume measurement of grain (see col. 3, lines 43-50).

It should be noted that there is no accumulation on a conveyor belt, and therefore Sadjadi does not disclose a volume increment accumulation signal. Instead, Sadjadi discloses an instantaneous volume measurement.

The Office Action asserts that Sadjadi discloses a volume measurement, and cites col. 2, lines 2-3 of Sadjadi in support of this assertion. The cited text does disclose an ultimate volume determination based on other measurements and on stored data, but Sadjadi does not measure the volume and does not generate a volume increment accumulation signal. Instead, a close reading of the text of Sadjadi discloses that Sadjadi obtains a series of light intensity measurements, processes the light measurements and converts the light measurements into distance measurements, and finally compares the

determined distance approximations to known values in order to approximate dimensions of the grain on the conveyor belt. Sadjadi then compares the distance approximation coordinates to reference coordinates in order to obtain a volume approximation.

Sadjadi does not measure volume. Sadjadi must process the measurement signals in order to generate a second set of values, and must then process the second set of values against other known values in order to obtain the volume approximation.

Vellidus does not disclose a volume increment accumulation device or a volume increment accumulation signal that is substantially related to forage mass. In contrast, Vellidus discloses a yield monitor for a peanut combine. Vellidus measures a crop yield by measuring a mass or weight of harvested peanuts collected in a collection basket (see col. 3, lines 44-54).

None of Bottinger, Sadjadi, or Vellidus discloses a volume increment accumulation device or a volume increment accumulation signal that is substantially related to forage mass. None of Bottinger, Sadjadi, or Vellidus discloses a computer that receives a volume increment accumulation signal. None of Bottinger, Sadjadi, or Vellidus discloses a computer that generates a yield amount based upon the accumulation signal, a forage processing machinery groundspeed, and forage processing machinery intake parameters.

Independent claim 117 therefore includes features that are neither taught nor suggested by the combination of Bottinger, Sadjadi, and Vellidus. Claim 119 is allowable for the same reasons as claim 117.

Claims 120 and 121 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bottinger, Sadjadi and Vellidus and further in view of U.S. Patent 5,855,166 (McPherson). Claims 120 and 121 depend from independent claim 117, and therefore are patentable for the reasons previously discussed.

Claim 127 stands rejected under 35 U.S.C. § 103(a) as being obvious over Wendte in view of U.S. Patent 4,487,002 (Kruse et al.). Claim 127 depends from independent claim 117, and therefore is patentable for the reasons previously discussed.

Applicants submit that there are numerous additional reasons in support of patentability, but that such reasons are moot in light of the above remarks and are omitted in the interests of brevity. Applicants respectfully request allowance of claims 117-127.

Please feel free to call me to discuss the patentability of the pending claims.

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